

WHAT IS CLAIMED IS:

1. An engine fuel injection apparatus including an injector having a fuel injection valve for injecting fuel and an air fuel injection valve that is mounted to a cylinder head so as to inject fuel directly to a combustion chamber together with compressed air, comprising:

at least part of a compressed air supply route for supplying compressed air to said injector is provided directly on the cylinder head so as to pass in close proximity to an exhaust port.

2. An engine fuel injection apparatus including an injector having a fuel injection valve for injecting fuel and an air fuel injection valve that is mounted to a cylinder head so as to inject fuel directly to a combustion chamber together with compressed air comprising:

at least part of a compressed air supply route for supplying the compressed air to said injector includes a tubular regulator that passes through an exhaust port and is mounted to the cylinder head and passages that are directly attached to said cylinder head.

3. The engine fuel injection apparatus according to claim 1, wherein a head-side water jacket is formed in the cylinder head so as to be arranged between

the exhaust port and a cylinder block in the vicinity of said exhaust port and part of said compressed air supply route is directly provided on the cylinder head on the side opposite from said head-side water jacket with respect to the exhaust port.

4. The engine fuel injection apparatus according to claim 1, wherein a compressed air pump to be connected to said compressed air supply routes is disposed on the side of the cylinder block corresponding to said exhaust port.

5. The engine fuel injection apparatus according to claim 2, wherein a compressed air pump to be connected to said compressed air supply routes is disposed on the side of the cylinder block corresponding to said exhaust port.

6. The engine fuel injection apparatus according to claim 3, wherein a compressed air pump to be connected to said compressed air supply routes is disposed on the side of the cylinder block corresponding to said exhaust port.

7. The engine fuel injection apparatus according to claim 4, wherein a pump case of said compressed air pump is formed integrally with the cylinder block.

8. The engine fuel injection apparatus according to claim 5, wherein a pump case of said compressed air pump is formed integrally with the cylinder block.

9. The engine fuel injection apparatus according to claim 6, wherein a pump case of said compressed air pump is formed integrally with the cylinder block.

10. An engine fuel injection apparatus comprising:

an injector having a fuel injection valve for injecting fuel and an air fuel injection valve, said injector being mounted to a cylinder head for injecting fuel directly to a combustion chamber together with compressed air; and

a compressed air supply route for supplying compressed air to said injector, at least part of said compressed air supply route being mounted in close proximity to an exhaust port for heating said compressed air immediately prior to being supplied to said injector.

11. The engine fuel injection apparatus according to claim 10, wherein a head-side water jacket is formed in the cylinder head so as to be arranged between the exhaust port and a cylinder block in the vicinity of said exhaust port and part of said compressed air supply route is directly provided on the cylinder head on the side opposite from said head-side water jacket with respect to the exhaust port.

12. The engine fuel injection apparatus according to claim 10, wherein a compressed air pump to be connected to said compressed air supply routes is disposed on the side of the cylinder block corresponding to said exhaust port.

13. The engine fuel injection apparatus according to claim 11, wherein a compressed air pump to be connected to said compressed air supply routes is disposed on the side of the cylinder block corresponding to said exhaust port.

14. The engine fuel injection apparatus according to claim 12, wherein a pump case of said compressed air pump is formed integrally with the cylinder block.
15. The engine fuel injection apparatus according to claim 13, wherein a pump case of said compressed air pump is formed integrally with the cylinder block.